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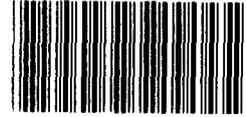
GAO

United States
General Accounting Office
Washington, D.C. 20548

Program Evaluation and
Methodology Division

September 28, 1992

The Honorable Dante Fascell
Chairman, Committee on
Foreign Affairs
House of Representatives



147792

Dear Mr. Chairman:

Pursuant to your request, I am enclosing a statement that summarizes--to the extent possible in unclassified form-- GAO's 2-year evaluation of the U.S. strategic triad. As you know, you requested the initiation of this comprehensive evaluation by GAO's Program Evaluation and Methodology Division, and we presented our findings and conclusions in a classified briefing to you and other Members of the Committee on May 28. The entire text of our eight classified studies is in the final stages of processing and will be sent to you in the next few days. The text of the enclosed statement has been reviewed--and cleared as unclassified--by the Department of Defense.

We believe this study can assist the Congress during its review of the arms control agreements recently agreed to by President Bush and the various representatives of the former Soviet Union. We also believe it will assist your consideration of the President's revised proposals for the modernization of the U.S. strategic triad. Should you or Members of your Committee have any questions, please call me on 275-1854, or Mr. Kwai-Cheung Chan, Director of Program Evaluation for Physical System Areas, on 275-3092.

It has been a privilege to work with you on this important study. With kind regards and best wishes for your retirement,

Sincerely yours,

A handwritten signature in cursive script, appearing to read 'Eleanor Chelinsky'.

Eleanor Chelinsky
Assistant Comptroller General

Enclosure

GAO/PEMD-92-36R Triad Summary

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UNCLASSIFIED SUMMARY STATEMENT ON THE GAO TRIAD PROJECT

IN APRIL 1990, THE HOUSE FOREIGN AFFAIRS COMMITTEE REQUESTED THAT GAO ASSESS THE MAJOR PROPOSED STRATEGIC MODERNIZATION PROGRAMS OF THE CARTER, REAGAN, AND BUSH ADMINISTRATIONS. IN PARTICULAR, WE WERE ASKED TO EVALUATE THE STRENGTHS AND WEAKNESSES OF THESE PROGRAMS, AND DETERMINE WHICH UPGRADES APPEAR TO BE THE MOST COST-EFFECTIVE. IT WAS IMMEDIATELY CLEAR, THEN, THAT THE STUDY WE WERE ABOUT TO CONDUCT WOULD NEED TO HAVE A BROAD SCOPE, EMPHASIZING THE COMPARISON OF STRATEGIC WEAPON SYSTEMS ACROSS ALL THREE LEGS, TAKING INTO ACCOUNT BOTH THE THREAT THEY WERE ADDRESSING AND THE ARMS CONTROL AGREEMENTS THAT WOULD NECESSARILY CONSTRAIN THEM.

WHEN WE BEGAN OUR STUDY IN THE SPRING OF 1990, THE SOVIET UNION WAS STILL THE CHIEF THREAT TO OUR SECURITY, AND THE START TREATY WAS STILL BEING NEGOTIATED. BUT EVEN THOUGH THE PAST TWO YEARS HAVE BROUGHT ENORMOUS CHANGES, THE CONGRESSIONAL TASK IS STILL WHAT IT WAS WHEN WE BEGAN OUR WORK--TO DECIDE ON THE FORM AND CONTENT OF THE FUTURE U.S. STRATEGIC FORCE STRUCTURE--AND WE BELIEVE OUR STUDY RETAINS ITS USEFULNESS TO THE CONGRESS FOR MAKING THOSE DECISIONS. THIS IS BECAUSE IT IS THE FIRST STUDY IN AT LEAST THREE DECADES THAT BOTH SETS UP A COMPREHENSIVE FRAMEWORK FOR COMPARING NUMEROUS DISSIMILAR STRATEGIC SYSTEMS ON MULTIPLE MEASURES AND THAT USES TEST AND PERFORMANCE DATA TO COMPARE THE SYSTEMS IN QUESTION.

MOREOVER, WE DID NOT SIMPLY USE THE PERFORMANCE DATA CITED BY DOD FOR THESE SYSTEMS, BUT INSTEAD VALIDATED THOSE DATA THROUGH EXTENSIVE RESEARCH, ANALYSIS AND QUESTIONING ABOUT THE UNDERLYING VALIDITY OF THE DATA, INCLUDING THE QUALITY AND QUANTITY OF THE TESTING OF EACH SYSTEM. FOR SYSTEMS WHERE WE FOUND THAT THE CLAIMED PERFORMANCE COULD NOT BE SUSTAINED BY SUCH ANALYSIS, WE HAVE MADE THE UNCERTAINTIES EXPLICIT.

OUR WORK INCLUDED A COMPARISON OF THE ESTIMATED 30-YEAR LIFECYCLE COSTS OF STRATEGIC WEAPON SYSTEMS (OR MAJOR UPGRADES TO EXISTING ONES) AGAINST SEVEN DIFFERENT MEASURES OF EFFECTIVENESS: (1) SURVIVABILITY (AGAINST BOTH OFFENSIVE AND DEFENSIVE THREATS, FOR BOTH PLATFORMS AND WEAPONS--FOR EXAMPLE, SUBMARINES AND THEIR BALLISTIC MISSILES; BOMBERS AND THEIR MISSILES); (2) WEAPON SYSTEM ACCURACY; (3) WARHEAD YIELD AND RELIABILITY; (4) WEAPON SYSTEM RELIABILITY; (5) FLEXIBILITY ACROSS A NUMBER OF DIMENSIONS, INCLUDING IMPACT ON ARMS CONTROL; (6) COMMUNICATIONS; AND (7) RESPONSIVENESS.

WE EXAMINED THE MAJOR SYSTEMS AND PROPOSED UPGRADES OF ALL THREE NUCLEAR LEGS, INCLUDING, FOR THE AIR LEG: THE B-2, B-1B, B-52G AND B-52H BOMBERS; THE ALCM, ACM, SRAM A, AND SRAM II MISSILES; FOR THE LAND LEG: THE PEACEKEEPER, PEACEKEEPER RAIL GARRISON, SICBM, MINUTEMAN II AND MINUTEMAN III ICBMS; AND FOR THE SEA LEG: THE C-4 AND D-5 SLBMS ON LAFAYETTE AND OHIO-CLASS SSBNS. WE EVALUATED THE UPGRADES FROM AN ARMS CONTROL

PERSPECTIVE AND WE LOOKED AT ALL SYSTEMS UNDER A FULL RANGE OF THREAT SCENARIOS, MOVING FROM TOTAL SURPRISE ATTACK TO STRATEGIC WARNING.

THE USEFULNESS OF THIS APPROACH IS THAT IT PERMITS: (1) THE ASSESSMENT OF DIFFERENT LEVELS OF WEAPON SYSTEM DELIVERY PLATFORMS AND WARHEADS BASED ON ARMS CONTROL, THREAT, COST AND PERFORMANCE CONSIDERATIONS, AND (2) THE DETERMINATION OF WHAT NUMBER AND STRUCTURE OF STRATEGIC FORCES WOULD LIKELY BE THE MOST EFFECTIVE.

GAO FINDINGS

A GENERAL CONCLUSION ARISING FROM THE NUMEROUS COMPARISONS WE MADE IN OUR STUDY IS THAT THERE EXIST SYSTEMATIC DISPARITIES BETWEEN THE ESTIMATES OR CLAIMS THAT HAVE BEEN MADE ABOUT THE TRIAD SYSTEMS AND WHAT THE DATA ACTUALLY SHOW. WE FOUND THIS TO BE THE CASE WHETHER THE ISSUE WAS THE LIKELY COST AND PERFORMANCE OF THE UPGRADES, THE ACTUAL PERFORMANCE OF CURRENT SYSTEMS, OR THE LIKELY OFFENSIVE OR DEFENSIVE THREATS TO THESE SYSTEMS FROM THE FORMER SOVIET UNION. (NOTE THAT IN EVERY CASE, THE LIKELY THREAT PRESENTED BY THE COMMONWEALTH OF INDEPENDENT REPUBLICS TODAY IS SUBSTANTIALLY LESS THAN THAT OF THE NOW DEFUNCT SOVIET UNION). THESE DISPARITIES ARE SUMMARIZED IN TABLE 1 BELOW, AND IN THREE OTHER TABLES INCLUDED AT THE END OF THIS STATEMENT.

Table 1: GAO's Findings on Significant Knowledge Limitations Vis-a-vis Four Dimensions of Strategic Weapons System Assessment.

	AIR			LAND		SEA
	B-2	B-1B	B-52	Peace-keeper	MM III	D-5/Ohio
Threat	X ^a	X ^a	X ^a	X ^a	X ^a	X ^a
Performance	X ^a	X ^a	X ^b	X ^a		
Testing	X ^{c,d}	X ^c		X ^{c,d}	X ^d	
Cost	X ^e					

- ^a = Threat or performance has been overestimated on at least one significant dimension.
- ^b = Threat or performance has been underestimated on at least one significant dimension.
- ^c = Operational testing has experienced a significant qualitative problem or limitation.
- ^d = Operational testing has experienced a significant quantitative problem or limitation.
- ^e = GAO found the cost to be significantly higher than alternatives available in the same leg and/or in other legs of the triad.

COMPARING ACROSS THE TRIAD LEGS, FOR EXAMPLE, A FIRST FINDING FROM OUR STUDY IS THAT, ON BALANCE, THE SEA LEG EMERGES AS THE MOST COST-EFFECTIVE, TAKING INTO ACCOUNT ALL THE MEASURES OF EFFECTIVENESS CITED ABOVE. TEST AND OPERATIONAL PATROL DATA SHOW THAT THE SPEED AND RELIABILITY OF DAY-TO-DAY COMMUNICATIONS TO SUBMERGED, DEPLOYED SSBNS WERE FAR BETTER THAN WIDELY BELIEVED, AND ABOUT THE EQUAL OF SPEED AND RELIABILITY OF COMMUNICATIONS TO ICBM SILOS. CONTRARY TO CONVENTIONAL WISDOM, SSBNS ARE IN ESSENTIALLY CONSTANT COMMUNICATION WITH NATIONAL COMMAND AUTHORITIES AND, DEPENDING ON THE SCENARIO, SLBMS FROM SSBNS WOULD BE ALMOST AS PROMPT AS ICBMS IN HITTING ENEMY TARGETS.

OTHER TEST DATA SHOW THAT THE ACCURACY OF THE NAVY'S D-5 SLBM IS ABOUT EQUAL TO THAT OF THE MOST LETHAL ICBM (THE PEACEKEEPER): ITS RELIABILITY IS ABOUT EQUAL, AND ITS WARHEAD HAS A 50 PERCENT HIGHER YIELD THAN THE PEACEKEEPER'S. IN SHORT, WE ESTIMATE THAT THE D-5 HAS A HARD TARGET KILL CAPABILITY ABOUT THE EQUAL OF THE PEACEKEEPER.

FURTHER, UNLIKE EASILY LOCATED SILOS, OPERATIONAL TEST RESULTS SHOW THAT SUBMERGED SSBNS ARE EVEN LESS DETECTABLE THAN GENERALLY UNDERSTOOD, AND THAT THERE ARE NO CURRENT OR LONG-TERM TECHNOLOGIES THAT WOULD CHANGE THIS.

A SECOND FINDING CONCERNS THE COST SIDE OF THE SEA LEG'S

COST-EFFECTIVENESS. MEASURED IN TERMS OF LIFECYCLE COSTS PER ARRIVING WARHEAD, THE B-2 WOULD COST 2.5 TO 5 TIMES MORE THAN THE D-5, UNDER ANY ATTACK SCENARIO, DEPENDING ON THE NUMBER OF WARHEADS ON THE D-5. MOREOVER, THESE ESTIMATES ASSUME THAT THE B-2 WILL BE AS EFFECTIVE AS PLANNED BY DOD AND THAT COSTS WILL NOT GROW, COMPARED TO CONSIDERABLY MORE RELIABLE AND COMPLETE COST, TEST AND OPERATIONAL PERFORMANCE DATA ON THE D-5/OHIO SYSTEM. COMPARED TO AN UPGRADED/DE-MIRVED MINUTEMAN III SYSTEM-- NOW BEING PROPOSED BY THE AIR FORCE--THE LIFECYCLE COST PER WARHEAD FOR THE D-5/OHIO SYSTEM IS ALMOST IDENTICAL, BUT WITH THE SIGNIFICANT ADVANTAGE OF BEING BASED ON SUBMERGED, ESSENTIALLY INVULNERABLE SUBMARINES.

A THIRD FINDING IS THAT THE FORMER SOVIET AIR DEFENSE THREAT--A FUNDAMENTAL JUSTIFICATION OFFERED FOR ACQUIRING THE B-2 BOMBER--HAD BEEN HEAVILY OVERESTIMATED. EVALUATION OF THE DATA SHOWED THAT SOVIET AIR DEFENSES WERE CONSIDERABLY LOWER THAN THE NUMBER PROJECTED EARLIER, AND THAT DOD STUDIES HAD ALSO GREATLY OVERESTIMATED THE EFFECTIVENESS OF THESE AIR DEFENSE SYSTEMS. MOREOVER, THE DISINTEGRATION OF THE SOVIET UNION AND ECONOMIC CONDITIONS WITHIN THE COMMONWEALTH REPUBLICS STRONGLY SUGGEST THAT CURRENT AIR DEFENSES ARE MORE LIKELY TO DEGRADE THAN TO IMPROVE. IN OTHER WORDS, THE AIR DEFENSE THREAT THAT THE B-2 WAS CREATED TO ADDRESS WAS NEVER IN FACT DEPLOYED.

A FOURTH FINDING SPEAKS TO THE COST OF THE B-2: EACH B-2

FOR A 20-AIRCRAFT FLEET WILL COST OVER \$2 BILLION IN DEVELOPMENT AND PROCUREMENT--AND THERE WILL ALSO BE ADDITIONAL OPERATING COSTS--WHEN THE PROGRAM IS COMPLETE. YET THE FIVE ADDITIONAL B-2S REQUESTED BY THE PRESIDENT WOULD INCREASE TOTAL AIR LEG STRATEGIC WARHEADS BY ONLY 2.3 PERCENT ABOVE CURRENT NUMBERS.

A FIFTH FINDING DEALS WITH UNCERTAINTIES IN THE B-2 PERFORMANCE. ACCORDING TO THE AIR FORCE, FLIGHT TESTS INVOLVING THE ALL-IMPORTANT RADAR DETECTABILITY DIMENSION INDICATED THAT THE B-2 DID NOT PERFORM AS PREDICTED ON AT LEAST ONE RADAR FREQUENCY. THE AIR FORCE HAS DECLARED SOLUTIONS TO BE IN HAND. HOWEVER, THE B-2 FLIGHT TEST PROGRAM REMAINS IN ITS VERY EARLY STAGES, AND THE POSSIBILITY OF ADDITIONAL PROBLEMS BEING UNCOVERED REMAINS.

A SIXTH FINDING CONCERNS THE CONTINUED VIABILITY OF THE B-52. WE BELIEVE THAT BOTH THE B-52GS AND H'S WILL REMAIN USABLE AIRCRAFT FOR YEARS TO COME. THERE ARE TWO REASONS FOR THIS: FIRST, AIR FORCE FLIGHT HOUR DATA SHOW THAT, AS OF 1990, THE AIRFRAMES AND OTHER KEY STRUCTURAL COMPONENTS OF BOTH MODELS HAD ONLY REACHED ABOUT HALF THEIR LIFE EXPECTANCIES. SECOND, COMPARISONS OF DATA ON MULTIPLE MEASURES OF EFFECTIVENESS SHOW THAT THE B-52 COMPARES FAVORABLY TO THE NEWER B-1B, WHICH HAS SHOWN DEFICIENCIES OR UNCERTAINTIES ON A NUMBER OF IMPORTANT PERFORMANCE DIMENSIONS. BOTH MODELS OF THE B-52 HAVE CONTINUING CAPABILITY, THE B-52G AS A CRUISE MISSILE CARRIER AND THE B-52H

AS A STRATEGIC PENETRATING BOMBER.

A SEVENTH FINDING INVOLVES THE PREDICTED BENEFITS OF ACM VERSUS ALCM. HERE WE FOUND THAT THE RANGE REQUIREMENT FOR ACM OFFERS ONLY A SMALL IMPROVEMENT OVER THE OLDER ALCM AND THAT THE ACCURACY IMPROVEMENT OFFERED DOES NOT APPEAR TO HAVE REAL OPERATIONAL SIGNIFICANCE. FURTHER, BECAUSE OF IMPORTANT LIMITATIONS IN THE FLIGHT TESTS CONDUCTED FOR BOTH CRUISE MISSILE SYSTEMS, THE PARAMETERS OF THEIR PERFORMANCE IN OPERATIONAL CONDITIONS IS INCOMPLETELY EXPLORED.

AN EIGHTH FINDING DEALS WITH THE VULNERABILITY OF OUR SILO-BASED ICBMS, A PRESUMPTION WE FOUND QUESTIONABLE ON SEVERAL COUNTS: FIRST, IT WAS BASED ON ASSUMING ONLY THE HIGHEST ESTIMATES FOR SUCH KEY SOVIET MISSILE PERFORMANCE DIMENSIONS AS ACCURACY, YIELD, AND RELIABILITY, WHILE AT THE SAME TIME DISCOUNTING VERY SUBSTANTIAL UNCERTAINTIES ABOUT PERFORMANCE THAT COULD NOT HAVE BEEN RESOLVED SHORT OF NUCLEAR CONFLICT. SECOND, IT DID NOT RECOGNIZE THE POSSIBILITY THAT THE SOVIETS COULD BE DETERRED FROM AN ALL-OUT ATTACK ON THE ICBM SILOS BY THEIR INABILITY TO TARGET SUBMERGED U.S. SSBNS OR ON-ALERT BOMBERS AND THEIR THOUSANDS OF WARHEADS THAT COULD BE EXPECTED TO RETALIATE. AND THIRD, IT IGNORED THE ROBUST CAPABILITIES OF U.S. EARLY WARNING SYSTEMS TO DETECT A SOVIET ICBM ATTACK, THEREBY ALLOWING A REASONABLY RAPID RESPONSE.

A NINTH FINDING RELATES TO UNCERTAINTY WITH REGARD TO ICBM PERFORMANCE. PEACEKEEPER ACCURACY ESTIMATES ARE BASED ON A VERY LIMITED NUMBER OF TEST SHOTS, SOME OF WHICH USED OPERATIONALLY UNREPRESENTATIVE SOFTWARE OR HARDWARE. THE ORIGINAL OPERATIONAL TEST PROGRAM OF 8 LAUNCHES PER YEAR COULD HAVE REDUCED THESE UNCERTAINTIES, BUT INSTEAD, AS AN ECONOMY MEASURE, SAC REDUCED PEACEKEEPER TESTS TO JUST 3 PER YEAR. SIMILARLY, A CUT IN THE MINUTEMAN III TEST RATE FROM 7 TO 4 PER YEAR WILL INCREASE UNCERTAINTY IN ACCURACY AND RELIABILITY ESTIMATES FOR THE MINUTEMAN IIIS.

ARMS CONTROL AND FUTURE U.S. STRATEGIC CAPABILITIES

AS FOR FUTURE U.S. STRATEGIC CAPABILITIES, THE VERY LARGE REDUCTIONS IN STRATEGIC FORCES ANNOUNCED BY PRESIDENTS BUSH AND YELTSIN IN JUNE SHOW THAT THE PRESIDENT HAS CONCLUDED THAT THE UNITED STATES CAN AFFORD TO SUBSTANTIALLY REDUCE BOTH ITS HARD TARGET KILL CAPABILITIES, AND ITS TOTAL NUMBER OF STRATEGIC WARHEADS. UNDER THAT AGREEMENT--NOT YET CONSIDERED BY THE SENATE--ALL MIRVED (MULTI-WARHEAD) ICBMS OF BOTH NATIONS WILL BE ELIMINATED, INCLUDING ALL PEACEKEEPERS AND SS-18S AND SS-24S. FURTHER, THE AGREEMENT CANCELS THE START BOMBER COUNTING RULES, WHICH PERMITTED NUMEROUS WEAPONS TO BE CARRIED ON A BOMBER BUT ONLY TO COUNT AS ONE, AND CAP SEA-LEG WARHEADS AT 1,750, OR ABOUT HALF THE POTENTIAL CAPABILITY OF THE ALL-OHIO/D-5 FORCE. IF IMPLEMENTED, THE BUSH-YELTSIN AGREEMENT WOULD CONSTITUTE LARGE

NUMERICAL REDUCTIONS IN NUCLEAR WEAPONS IN EXISTING FORCE LEVELS AND IMPORTANT QUALITATIVE REDUCTIONS IN OFFENSIVE CAPABILITIES.

BEFORE TURNING TO OUR FIVE RECOMMENDATIONS, IT SHOULD BE NOTED THAT THE FINDINGS SUMMARIZED ABOVE ARE ONLY A SAMPLE OF WHAT IS IN OUR 8 REPORTS--IN PARTICULAR, THERE ARE ADDITIONAL FINDINGS ON C³I, STRATEGIC RELOCATABLE TARGETS AND THE SRAM A MISSILE.

GAO RECOMMENDATIONS

GAO'S RECOMMENDATIONS CONCERN THE B-2, THE B-1B, THE MINUTEMAN III FORCE, AND THE ACM AND D-5 MISSILES. SOME OF THESE INVOLVE THE MAINTENANCE OF TESTING TO INSURE ADEQUATE ASSESSMENTS OF WEAPON SYSTEM EFFECTIVENESS AND RELIABILITY. NONE OF THE RECOMMENDATIONS WOULD CONFLICT WITH CURRENT PROPOSALS FOR A NUCLEAR WARHEAD TEST BAN.

- ON THE B-2, WITH RESPECT TO THE DETERMINATION OF WHETHER FIVE MORE B-2S SHOULD BE PROCURED, WE CAUTION THAT WE FIND NO STRATEGIC GROUNDS TO ACQUIRE THEM. THEY ARE EXTREMELY COSTLY; WE FOUND NO NEED FOR ANY B-2S IN A STRATEGIC ROLE; AND THEIR CAPABILITY TO PERFORM THEIR INTENDED MISSION WILL REMAIN UNCERTAIN FOR SOME TIME YET TO COME.

- THERE IS A NEED FOR ADDITIONAL OPERATIONAL TESTING OF THE B-

1B TO VERIFY THAT SCHEDULED IMPROVEMENTS IN RELIABILITY AND ELECTRONIC COUNTERMEASURES ARE ACHIEVED, AND TO REMOVE REMAINING UNCERTAINTIES CONCERNING RANGE PERFORMANCE.

- ON MINUTEMAN III, WE QUESTION THE ADVISABILITY OF FUNDING EITHER DE-MIRVING OR EXTENSIVE MAJOR LIFESERVICE UPGRADES FOR THIS FORCE BECAUSE THE COST-EFFECTIVENESS OF SUCH AN EFFORT IS NOT OBVIOUS. THERE ARE THREE REASONS FOR THIS: THE ESTIMATED \$16 BILLION PRICE TAG OF MAINTAINING IT THROUGH THE YEAR 2020; THE FACT OF A REDUCED-THREAT ENVIRONMENT, NOW AND IN THE FORESEEABLE FUTURE; AND THE LIKELIHOOD THAT EITHER DE-MIRVING AND/OR OTHER SUBSTANTIVE MODIFICATIONS WOULD REQUIRE ROBUST FLIGHT TEST PROGRAMS THAT WOULD QUICKLY USE UP LIMITED TEST ASSETS.
- RIGOROUS D-5 SLBM FLIGHT TESTING SHOULD CONTINUE AS PLANNED, GIVEN THE IMPORTANCE OF THAT MISSILE TO THE SEA LEG OF THE TRIAD. THE D-5 TEST RATE SHOULD NOT BE CUT FROM LEVELS REQUIRED TO CONFIDENTLY ASSESS WEAPON SYSTEM PERFORMANCE, AS HAS OCCURRED WITH THE PEACEKEEPER AND MINUTEMAN FORCES.
- ON THE ACM, WE CONCUR WITH THE DOD DECISION TO CAP PRODUCTION AT 520 MISSILES, RATHER THAN FUNDING AN ADDITIONAL 120, GIVEN THAT WE FOUND ACM TO PROVIDE LITTLE OPERATIONALLY SIGNIFICANT IMPROVEMENT OVER THE OLDER ALCM. HOWEVER, TO ENSURE THE EFFECTIVENESS OF THE CRUISE MISSILE

INVENTORY, WE SEE A NEED TO HOLD MORE REALISTIC FLIGHT TESTS OF ALCM'S SURVIVABILITY AND OF BOTH ALCM'S AND ACM'S PERFORMANCE OVER TERRAIN THAT HAS NOT BEEN PRE-TESTED.

IN CONCLUSION, GAO'S COMPARISONS OF WEAPON SYSTEMS ACROSS THE THREE LEGS OF OUR STRATEGIC TRIAD HAVE LED US TO AGREE, AS WE DESCRIBE IN DETAIL IN OUR REPORTS, WITH MOST OF THE PRESIDENT'S INITIATIVES, BUT ALSO TO BELIEVE THAT MORE CAN SAFELY BE DONE OR OMITTED. THAT IS, WE THINK THAT THE FIVE RECOMMENDATIONS LISTED ABOVE--IN COMBINATION WITH THE INITIATIVES ALREADY PROPOSED BY THE PRESIDENT--WILL PROVIDE FOR A NUCLEAR DETERRENT THAT (1) INTEGRATES OUR MOST EFFECTIVE WEAPON SYSTEMS INTO A LEANER, LESS COSTLY WHOLE; AND (2) FULLY SERVES THE NATION'S STRATEGIC SECURITY REQUIREMENTS FOR MANY YEARS TO COME.